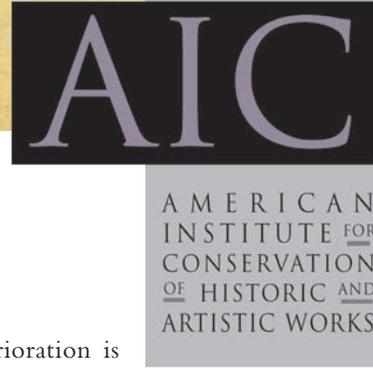


CARING FOR YOUR TREASURES



Since the late 1950s, video has served as a powerful medium of artistic expression and visual documentation, capturing and portraying events that shape our lives and our perception of the world. Today, video camcorders are used frequently to document momentous events in the life of a family—the birth of a child, high school graduation, summer vacations, and weddings.

Unfortunately, as an information storage medium, videotape is not as stable as photographs. Videotape is fragile—subject to damage and deterioration from exposure to poor environmental conditions and inadequate handling practices. Even if properly cared for, magnetic tape may last for only a few decades.

COMPOSITION

Videotape is composed primarily of three components: magnetic (metal oxide) particles, a polyurethane-based binder, and a polyester base material.

The metal oxide particles record and store magnetic signals. Magnetic particles differ greatly in their stability. Changes in the magnetic properties of these materials may result in an irretrievable loss of color, saturation, and sound clarity.

The polyurethane binder holds the magnetic particles in place. Often the binder also contains special lubricants to smooth passage of the tape across the recording and playback devices. The binder is subject to a type of chemical deterioration known as hydrolysis, which can make the videotape sticky and soft and cause magnetic particles to shed from the base (referred to as sticky shed syndrome) and clog recording heads. Playback is impossible.

The polyester base material provides a flexible support but is also susceptible to physical deformations due to excessive tape pack stresses and poor wind quality. These deformations can result in mistracking when the tape is played. A back coating, if present, reduces static electricity and aids in keeping the tape securely wound when in storage. The backcoat also serves to reduce tape friction and helps prevent tape distortion by providing a more uniform tape pack wind.

All components are subject to irreversible deterioration caused by exposure to extremes of temperature and humidity as well as physical damage due to poor handling and storage practices.

ENVIRONMENT

The best way to prevent deterioration is to store all videotapes in an environment that does not fluctuate significantly in temperature or relative humidity. High temperature, high humidity, and the presence of dust and pollutants in the air will result in irreversible loss of both video and audio signals.

A dust-free, temperature- and humidity-controlled environment—68 degrees Fahrenheit and 20 to 30 percent relative humidity—is recommended for the safe home storage of videotape.

Never keep videotapes in a hot, wet environment or expose them to direct sunlight. Storage at high temperatures (in an attic or on windowsills) may result in tape-to-tape adhesion (known as blocking), degradation of the binder (known as shedding), and permanent distortion of the tape backing. Such degradations can lead to severe image deterioration (known as dropouts). In video recordings, short-duration dropouts appear as flashes, white spots, or streaks. Storage at high humidity (in a basement or garage) may cause fungal growth.

HANDLING

Minimize tape handling at all times. Take care not to drop tapes or cassettes. Do not touch the surface or the edge of the tape.

Avoid contamination of the tape by dirt, dust, food, cigarette smoke, and airborne pollutants. Cleanliness is important because minute debris can cause loss of signal or dropouts. The frequent appearance of dropouts is an indication that the videotape playback device is contaminated with dirt and/or that the tape is deteriorating.

STORAGE

When tapes are not in use, store them on end (like books on a library shelf) to prevent deformation. Do not store videotapes lying flat. When housed in a horizontal position, pressure from other tapes can cause distortions. Rewind tapes after recording or playback.

A tape must not be left threaded in the video recorder for a long period. Leaving a tape in the playback machinery overnight, for example, is not desirable. Likewise, tapes should be



A GUIDE FOR CLEANING, STORING, DISPLAYING, HANDLING, AND PROTECTING YOUR PERSONAL HERITAGE

HOME VIDEOTAPE



“CLEANLINESS IS IMPORTANT BECAUSE MINUTE DEBRIS CAN CAUSE LOSS OF SIGNAL OR DROPOUTS”

inserted and ejected only at blank, unrecorded sections. Never eject a tape in the middle of a recording. Pausing tapes for prolonged periods also results in degraded image quality. After recording, rewind the tape before ejecting it.

Always return tapes to carefully labeled protective inert plastic containers when they are not in use. Cardboard boxes deteriorate over time and provide little protection from handling, environmental fluctuations, fire, or water.

Date and subject matter is crucially important to determining the contents of a videotape. All labels should be consistent and on both the outer box and the cassette itself (use of the adhesive labels that come with the videotape are safe).

Videotapes, especially modern ones, are recorded with high levels of magnetic energy that make them relatively immune to problems from common household magnetic fields. Weak magnetic fields are produced around electrical appliances, power tools, and television sets. However, it is good practice to avoid exposing tapes to any magnetic fields. A few feet separation from a magnetic source will usually provide sufficient protection.

PLAYBACK DEVICES

Playback devices must be cared for and cleaned regularly following recommended maintenance procedures. Protect VCRs with a dust cover. Dirt in the tape path through the machine can permanently scratch the videotape's surface.

RECORDING PRACTICES

Always use a new, brand-name tape from a recognized manufacturer for important recordings. Avoid extended-play tapes because they use a thinner polyester tape base and, therefore, are less wear resistant. Before recording it is good practice to wind the tape from one hub to another and then back. This procedure will relieve stresses on the tape that could result in a slightly irregular passage of the tape through the recorder. Record at standard speed. Always break off the tab on a videocassette to prevent accidental re-record. Make protection copies of the most valuable videotapes and keep them in a separate location.

DISASTER SITUATIONS

When disaster strikes, it can leave a single tape or an entire collection unusable. For this reason, videotapes must be well protected from damage by fire or water. Magnetic tape cannot tolerate high temperatures. Temperatures above 150

degrees Fahrenheit can cause permanent damage to videotape. Experience, research, and testing have led to the development of highly effective restoration and remastering techniques that may preserve lost or damaged information in the event of a disaster.

RESTORATION AND CONSERVATION

Deteriorated tapes may require duplication onto a new tape stock (called reformatting). This is especially true if the original recording was done on a type of machine that is no longer in production (like Sony Betamax). Tapes that are ten years old or older or that have been poorly stored and improperly handled are a high priority for restoration. Restoration is the process by which a videotape, degraded by age, is temporarily or permanently transcribed to a playable condition. The restoration process usually requires highly technical methods and materials. After preservation recopying has been completed, the original video should be stored and not discarded.

Unfortunately, most analog home videotape formats have some sort of image degradation when they are copied. For especially important videotapes (for instance, unique recordings of special events), consider making a copy onto a professional format.

WHEN TO CONSULT A CONSERVATOR

Professional conservators are skilled in many of the preventive preservation techniques that can prolong the life of your videotape. Conservators will also provide information on restoration and conservation services that may be required for videotapes that are severely damaged or obsolete. AIC's Guide to Conservation Services at www.conservation-us.org can direct you to a qualified conservator in your area.

ABOUT AIC

The American Institute for Conservation of Historic and Artistic Works (AIC) exists to support the conservation professionals who preserve our cultural heritage. The AIC plays a crucial role in establishing and upholding professional standards, promoting research and publications, providing educational opportunities, and fostering the exchange of knowledge among conservators, allied professionals, and the public. The AIC's 3,500 members all share the same goal: to preserve the material evidence of our past so we can learn from it today and appreciate it in the future.

To learn more about AIC or to become a member, please visit www.conservation-us.org.

The recommendations in this document are intended for guidance only. The AIC does not assume responsibility or liability.

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